Arctic Research Opportunities

Natural, Social, and System Sciences and Research Support and Logistics Programs

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Program Announcement

NSF 00-96

OFFICE OF POLAR PROGRAMS

TARGET DATES: August 8 of each year, February 15 of each year

NATIONAL SCIENCE FOUNDATION

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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: Arctic Research Opportunities

Synopsis of Program: The National Science Foundation (NSF) invites scientists at U.S. institutions to submit proposals to perform research in the Arctic and to perform related research and data analysis. The goal of the NSF Arctic Research Programs is to gain a better understanding of the Earth's biological, geological, chemical, and social processes, and the interactions of ocean, land, atmosphere, biological, and human systems. Arctic research is supported at NSF by the Office of Polar Programs (OPP) (http://www.nsf.gov/od/opp), as well as by a number of other disciplinary programs within the Foundation. Program representatives from OPP and other NSF programs that support arctic research coordinate across NSF, including joint review and funding of arctic proposals, as well as mutual support of special projects with high logistical costs. Researchers interested in submitting proposals should consult this announcement in addition to OPP's Guidelines and Award Conditions for Scientific Data (http://www.nsf.gov/cgi-bin/getpub?opp991).

Cognizant Program Officer:

- Dr. Jane Dionne or Dr. Neil R. Swanberg, Arctic Natural Sciences Program Managers, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:jdionne@nsf.gov or nswanber@nsf.gov.
- Dr. Michael Ledbetter or Dr. John Christensen, Arctic System Science Program Managers, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:mledbett@nsf.gov or jchriste@nsf.gov.
- Dr. Fae Korsmo, Arctic Social Sciences Program Manager, Office of Polar Programs, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:fkorsmo@nsf.gov.
- Mr. Simon Stephenson, Arctic Research Support and Logistics Program Manager, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:sstephen@nsf.gov.
- Mr. Charles Myers, Head, Interagency Arctic Staff, Arctic Sciences Section, 755 South, telephone: 703-306-1029, e-mail:cmyers@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) Number:

- 47.078 --- Office of Polar Programs

ELIGIBILITY INFORMATION

- **Organization Limit:** None
- **PI Eligibility Limit:** None
- **Limit on Number of Proposals:** None

AWARD INFORMATION

- **Anticipated Type of Award:** Standard or Continuing
- **Estimated Number of Awards:** 130-160
- **Anticipated Funding Amount:** approximately $20-25 million per year, pending availability of funds.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Guidelines

- **Proposal Preparation Instructions:** Supplemental Preparation Guidelines
    - The program contains supplements to the standard GPG proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Statutory Cost Sharing (1%) is required
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Deadline/Target Dates

- **Letter of Intent Deadline:** None
- **Preproposal Deadline:** None
- **Full Proposal Deadline:** August 8 of each year, February 15 of each year

D. FastLane Requirements

- **FastLane Submission:** Full Proposal Required
- **Fast Lane Contact:**

- Mrs. Sarita Rich, Fastlane Coordinator, OPP, 755 South, telephone: 703-306-1033, e-mail:srich@nsf.gov.

PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board approved criteria apply.

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Additional award conditions apply. Please see the program announcement/solicitation for further information.

- **Reporting Requirements:** Additional reporting requirements apply. Please see the full program announcement/solicitation for further information.

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I. INTRODUCTION

OPP offers focused multidisciplinary and interdisciplinary programs that emphasize the uniqueness of the Arctic for special scientific studies. Models indicate that the arctic regions are among the most sensitive to environmental change. They have a long natural climate record and thousands of years of human settlement. This interplay provides a unique basis for integrated research on global systems and human adaptation.

OPP disciplinary interests encompass the atmospheric, biological, earth, ocean, and social sciences. Interdisciplinary research in the biosciences, geosciences, and social sciences is linked in the Arctic System Science Program. In addition to supporting research on long-term human-environment interactions, OPP encourages the study of contemporary socioeconomic, cultural, and demographic issues in the changing political environment of the post-Cold War world. The OPP also encourages research relevant to both polar regions, especially glaciology, permafrost, sea ice, oceanography, ecology, and aeronomy. Increasing emphasis is being given to the integration of research and education. Scientific programs connected to students (K-12 and higher), affected communities in the north, and the public's improved understanding of basic research are strongly encouraged.

The United States Arctic Research and Policy Act of 1984 defines the Arctic as all areas north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas including the Arctic Ocean and the Beaufort, Bering, and Chukchi Seas, and the Aleutian chain. Field projects falling outside these boundaries but directly related to arctic science and engineering conditions or issues, such as laboratory and theoretical studies, are appropriate, although OPP recommends contacting the program officer to verify the appropriateness of the proposed study.

The Foundation is one of twelve Federal agencies that sponsor or conduct arctic science, engineering, and related activities. As mandated by the Arctic Research and Policy Act of 1984, Federal interagency research planning is coordinated through the Interagency Arctic Research Policy Committee (IARPC), which is chaired by NSF.

As the Arctic is the homeland of numerous Native peoples, special attention must be given to all aspects of research and education that may potentially impact their lives. An interagency statement of "Principles for the Conduct of Research in the Arctic" has been developed and all arctic research grantees are expected to abide by these guidelines. These guidelines can be found at http://www.nsf.gov/od/opp/arctic/conduct.htm.

In fiscal year 1999 NSF supported 418 Arctic science, education, and infrastructure projects for a total of $66.92 million. Of this, $49.54 million was from the OPP Arctic Research Program.

A compilation of all NSF arctic and related research grants for each fiscal year is available (NSF 97-101 or http://www.nsf.gov/cgi-bin/getpub?nsf98101 for FY 1997). The current NSF Guide to Programs (NSF 00-65 or http://www.nsf.gov/cgi-bin/getpub?gp) should be consulted for additional program information.

II. PROGRAM DESCRIPTION

RESEARCH PROGRAMS

Listed below are the principal OPP programs that support arctic research. There are three integrated programs in OPP: Arctic Natural Sciences, Arctic Social Sciences, and Arctic System Science. Special solicitations provide additional opportunities. Support is also provided for data and information management research activities. These programs and their components are described below.

Arctic Natural Sciences Program

The OPP Arctic Natural Sciences (ANS) Program supports research in glaciology and in the atmospheric, biological, earth, contaminants, and ocean sciences. This program provides core support for disciplinary research in the Arctic and coordinates its support of arctic research with the Directorates for Geosciences, Mathematical and Physical Sciences, and Biological Sciences. Areas of special interest include marine and terrestrial ecosystems, arctic adaptations, atmospheric chemistry, exploration of the Arctic Ocean, as well as arctic geological and glaciological processes.

Atmospheric Sciences

Research in arctic atmospheric sciences focuses on stratospheric and tropospheric processes as well as arctic climate and meteorology. Research on past climates and atmospheric gases as preserved in snow and ice cores has also been supported as has research on atmosphere-sea and atmosphere-ice interactions.

In upper atmospheric and space physics, research interests include auroral studies, atmospheric dynamics and chemistry, as well as magnetosphere-ionosphere coupling. Conjugate studies are considered jointly with the Antarctic Aeronomy and Astrophysics Program in OPP and the Division of Atmospheric Sciences in the Geosciences Directorate.

Biological Sciences

OPP supports projects that emphasize understanding of the adaptation of organisms to the arctic environment. Biological studies in the Arctic include research in freshwater, marine, and terrestrial biology; organismal adaptation to the arctic environment; ecology; microbiology; ecosystem structure and processes; and the biological consequences of ultraviolet radiation. OPP also participates in the Biocomplexity in the Environment initiative (http://www.nsf.gov/home/crssprgm/be/) and the Life in Extreme Environments (LExEN) initiative (NSF announcement 00-37; http://www.nsf.gov/home/crssprgm/lexen/start.htm).

Earth Sciences

Research supported by OPP includes all sub-disciplines of terrestrial and marine geology and geophysics. Of greatest interest is a better understanding of Arctic geological processes that are important for improving our ability to interpret the geologic record of environmental change in the ancient polar regions, particularly in the Late Cretaceous and Cenozoic. Also of high interest is a better understanding and reconstruction of the plate tectonic history of the Arctic Ocean.

Glaciology

OPP is the focal point for glaciological research within the Foundation. Glaciological research is concerned with the history and dynamics of all naturally occurring forms of snow and ice, including seasonal snow, glaciers, and the Greenland ice sheet. The Arctic Natural Sciences Program also includes ice dynamics, modeling, glacial geology, and remote sensing studies of ice sheets.

Ocean Sciences

The goal of oceanographic research in the Arctic is to develop knowledge of the structure of the Arctic Ocean and adjacent seas, their physical and biological interactions with the global hydrosphere, and the formation and persistence of the arctic sea-ice cover. Areas of special interest are: the distribution of life in high latitude oceans; low temperature life processes; the formation, movement, and mixing of arctic water masses; the growth and decay of sea ice; the exchange of salt and heat with the Atlantic Ocean and the Bering Sea; geographical anomalies; sedimentary history and the role of the Arctic Ocean and adjacent seas in global climate. Proposals concerned with the interdependencies of chemical and physical processes and marine organisms and productivity are encouraged.

Arctic Social Sciences Program

The OPP Arctic Social Sciences Program (ASSP) encompasses all social sciences supported by NSF. These include anthropology, archaeology, economics, geography, linguistics, political science, psychology, science studies, sociology, and related subjects.

Although unsolicited proposals in any of the social sciences mentioned above are welcome, areas of particular interest include culture and environment, resources and economic change, development of social and political institutions, ethnic and regional identities, and knowledge systems. These five research areas are identified and explained in the report, *Arctic Social Sciences: Opportunities in Arctic Research* (Fairbanks: Arctic Research Consortium of the United States, June 1999; available through the Arctic Research Consortium at http://www.arcus.org).

The Arctic Social Sciences Program especially encourages projects that are circumpolar and/or comparative; involve collaborations between researchers and those living in the Arctic; or form partnerships among disciplines, regions, researchers, communities, and/or students (K-12, undergraduate, or graduate). Dissertation research proposals will be accepted. Please consult the "Dissertation Panel Advice to Students" guidelines in the Division of Behavioral and Cognitive Sciences (http://www.nsf.gov/sbe/bcs/anthro/cultdadv.htm).

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the Common Rule (Federal Policy for the protection of Human Subjects, 45 CFR para. 690). Before issuance of an NSF award, all projects involving human subjects must either have approval from the organization's Institutional Review Board (IRB) or identify the applicable subsection exempting the proposal from IRB review, as established in section 101(b) of the Common Rule. The box for "Human Subjects" should be checked on the NSF Form 1207 with the IRB approval date (if available) or exemption subsection from the Common Rule identified in the space provided. If letters of permission or

approval are included, such as those from Native organizations or communities in which the work will take place, please contact program officer for directions on how to include them.

The Arctic Social Sciences Program considers joint review and funding with other NSF and OPP programs, when appropriate. Special funding opportunities may also be available through the human dimensions component of the Arctic System Science (ARCSS) Program (see below).

Arctic System Science (ARCSS) Program

The ARCSS Program supports interdisciplinary research with a goal toward understanding the physical, geological, chemical, biological and sociocultural processes of the arctic system that interact with the total Earth system and contribute to or are influenced by global change, in order to advance the scientific basis for predicting environmental change on a seasonal-to-centuries time scale and to formulate policy options in response to the anticipated impacts of global change on humans and societal support systems. In order to achieve the goals of ARCSS emphasis is placed on five scientific questions:

1) How will the arctic climate change over the next 50 to 100 years? 2) How will human activities interact with future global change to affect the sustainability of natural ecosystems and human societies? 3) How will changes in arctic biogeochemical cycles and feedbacks affect arctic and global systems? 4) How will changes in arctic hydrologic cycles and feedbacks affect arctic and global systems? 5) Are predicted changes in the arctic system detectable?

ARCSS directs most available support to large integrated research projects that are proposed and implemented in response to science plans developed by the scientific community through the Science Steering Committees (SSCs) for each component of ARCSS. However, global change proposals from individual investigators or small groups of investigators are also welcome.

ARCSS has four linked components for which proposals are encouraged: 1) Ocean/Atmosphere/Ice Interactions (OAII); 2) Land/Atmosphere/Ice Interactions (LAII); 3) Human Dimensions of the Arctic System (HARC), and 4) Paleoenvironmental Studies. Paleoenvironmental proposals are considered within the Earth System History initiative of the United States Global Change Research Program and are solicited under a different announcement with separate submission dates.

A Science Plan describing the integrated objectives of the ARCSS Program is available on the World Wide Web: http://www.arcus.org/ARCSS_Plan/ARCSS_Plan.html. The Science Plan for individual ARCSS components is also available: LAII (http://www.laii.uaf.edu/LAII_97.pdf); OAII (http://www.arcus.org/Marine_Science/index.html) ; HARC http://www.arcus.org/HARC/index.html, and PARCS (http://www.arcus.org/parcs/fr_parcs.html).

ARCSS also supports the integration of research results across components within ARCSS as well as with any other Arctic research program through a Synthesis, Integration and Modeling Studies (SIMS) effort. Examples of projects supported within each component and SIMS are accessible on the World Wide Web site maintained by the ARCSS Data Coordination Center of the University of Colorado National Snow and Ice Data Center, http://arcss.colorado.edu/.

The arctic system consists of physical, biological, and cultural factors that may respond to global change. Some models that predict the climatic response to global change show greater change in the Arctic than any other region. The predicted climatology, however, may not consider the largely unknown interannual variability in the Arctic. The presence of cultural institutions in a region subject to possibly large perturbations, however, makes it important that scientists better understand interactions of the global and Arctic systems. Therefore, the research supported in ARCSS extends beyond purely observational studies to those studies that predict and analyze the consequences of global change important to wise stewardship of renewable resources and development of policy options for resource managers and residents.

Successful proposals have been funded by the Office of Polar Programs, the Divisions of Atmospheric Sciences and Ocean Sciences within the Directorate for Geosciences, by the Division of Environmental Biology, Directorate for Biological Sciences and, in some cases jointly with other federal agencies.

For more information on how a research proposal might best fit the programs and themes of ARCSS, contact the program manager.

OTHER ARCTIC SUPPORT

Arctic Research and Policy

OPP supports the management of arctic data and information, including development of the Arctic Environmental Data Directory (AEDD). The Arctic Environmental Data Directory (AEDD) is accessible on the World Wide Web (http://agdc.usgs.gov/), and contains information on several hundred arctic data sets. The objective of this type of support is to make arctic data and information more readily available to researchers. Proposals to integrate data and information management are especially encouraged.

Arctic Research Support and Logistics

An arctic research support and logistics (RSL) budget component has been established by OPP to address all field program requirements. However, the prime route to access this support is still through the regular proposal process, and field support should be justified in the context of the science proposed. The RSL program support covers, but is not limited to, providing food and shelter while conducting field work, user and day-rate fees, salaries of staff hired specifically for field work, and activities to coordinate projects with permitting agencies and Native peoples. A brief section of the budget justification should outline the field plan and associated costs. Specifically, investigators are encouraged to consider increased mobility to and within the Arctic, the increased safety potential of satellite-based global phone networks, inclusion of field staff trained and experience in field (and boat) safety and first aid, and improvements to equipment used in the field for arctic conditions.

The science program manager, in consultation with the manager of the RSL program, will determine the level of support that can be provided from the logistics program. In some cases, OPP may determine that several unrelated proposals can derive significant cost-benefit from a centrally managed resource. If so, NSF's Arctic Support Contractor (VECO Polar Resources) or other entity would be tasked to coordinate the support with the principal investigators, consistent

with the agreements between the investigators, and their program managers. In other cases, the work can be proposed as a large coordinated activity to be supported at some level by the support contractor. Other resources managed by the contractor are, for example, use of military airlift, support to and within Greenland, support at Prudhoe Bay/Deadhorse and on the Alaskan North Slope and Seward Peninsula, excluding Barrow. Support at Barrow is through the Barrow Arctic Science Consortium. Proposing investigators are encouraged to discuss their projects with the Arctic Support Contractor, http://www.veco.com/vpr, for information on support options prior to preparing the proposal.

All work should be described in the proposal. Costs should be included if it is likely they will not be provided by a support entity. If in doubt, include the costs.

There are special requirements for field work in Greenland. Principal investigators contemplating work in Greenland should obtain the Danish Polar Center application form for research in Greenland. Application forms are available on the World Wide Web at http://www.dpc.dk. A copy of the application should be included with the proposal submitted to OPP.

Researchers intending to use a vessel from the University-National Oceanographic Laboratory System (UNOLS) or the USGC Healy should follow the UNOLS procedure (http://www.unols.org or http://www.gso.uri.edu/unols/unols.html).

III. ELIGIBILITY INFORMATION

See Grant Proposal Guide (NSF 00-2), Chapter I, Section D.

IV. AWARD INFORMATION

Approximately 130-160 awards are expected to be made, with a combination of standard and continuing awards. Size will vary widely depending on the type of work proposed. Funding for the Arctic research programs will total approximately $20-25 million, per year, pending availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG) (NSF 00-2). The complete text of the GPG (including electronic forms) is available electronically on the NSF Web Site at: http://www.nsf.gov/pubs/2000/nsf002/start.htm. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

Proposals for field work should be submitted well in advance. For example, for field work in summer 2002, proposals should be submitted preferably by February 15, 2001, but no later than August 15, 2001.

A brief section of the budget justification should outline the field plan and associated costs (see Section II under "Arctic Research Support and Logistics").

Principal investigators contemplating work in Greenland should obtain the Danish Polar Center application form for research in Greenland. Application forms are available at http://www.dpc.dk. A copy of the application should be included with the proposal submitted to OPP (in the Supplementary Docs. section of Fastlane).

Researchers intending to use a vessel from the University-National Oceanographic Laboratory System (UNOLS) or the U.S. Coast Guard Healy should follow the UNOLS procedure (http://www.unols.org or http://www.gso.uri.edu/unols/unols.html).

Proposers are reminded to identify the program announcement/solicitation number (NSF 00-96) in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

In accordance with Congressional requirements (see GPM 330), NSF requires that each awardee share in the cost of research projects resulting from unsolicited proposals. For purposes of NSF, proposals submitted in response to this announcement are considered unsolicited. The awardee may meet the statutory cost sharing requirement by choosing either of two alternatives: (1) by cost sharing a minimum of one percent on the project; or (2) by cost sharing a minimum of one percent on the aggregate costs of all NSF-supported projects requiring cost sharing.

The minimum one percent statutory cost sharing requirement discussed above need NOT be entered on Line M of the NSF Form 1030.

C. Deadline/Target Dates

Proposals must be submitted by the following date(s):
August 8 of each year
February 15 of each year

Proposals received after the established target date may still be reviewed, although they may miss a particular panel or committee meeting.

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Announcement through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm.

Submission of Signed Cover Sheets. The signed copy of the proposal Cover Sheet (NSF Form 1207) must be postmarked (or contain a legible proof of mailing date assigned by the carrier) within five working days following proposal submission and be forwarded to the following address:

National Science Foundation
DIS – FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgements.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements careful consideration in making funding decisions.

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens - women and men, underrepresented minorities, and persons with disabilities - is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are mailed to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement will be reviewed by Mail and/or panel review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at its own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI. A, for additional information on the review process).

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any NSF brochure, program guide, announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, (NSF 95-26) available electronically on the NSF web site at http://www.nsf.gov/cgi-bin/getpub?gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is 202.512.1800. The GPM may be ordered through the GPO web site at http://www.gpo.gov.

Principal Investigators are expected to follow the Principles for the Conduct of Research in the Arctic, prepared by the Social Science Task Force of the U.S. Interagency Arctic Research Policy Committee (IARPC) and approved by IARPC in 1990. These principles are listed at http://www.nsf.gov/od/opp/arctic/conduct.htm.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

The Office of Polar Programs, in conformance with NSF policy, expects investigators to share with other researchers, at no more than incremental cost and within a reasonable time, the data, derived data products, samples, physical collections, and other supported materials gathered or created in the course of a research project. For further details on this policy, please see "Guidelines and Award Conditions for Scientific Data" at http://www.nsf.gov/cgi-bin/getpub?opp991.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries should be made to the Arctic Research Opportunities Program:

- Dr. Jane Dionne or Dr. Neil R. Swanberg, Arctic Natural Sciences Program Managers, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:jdionne@nsf.gov or nswanber@nsf.gov.

- Dr. Michael Ledbetter or Dr. John Christensen, Arctic System Science Program Managers, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:mledbett@nsf.gov or jchriste@nsf.gov.

- Dr. Fae Korsmo, Arctic Social Sciences Program Manager, Office of Polar Programs, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:fkorsmo@nsf.gov.

- Mr. Simon Stephenson, Arctic Research Support and Logistics Program Manager, Arctic Sciences Section, Office of Polar Programs, 755 South, telephone: 703-306-1029, e-mail:sstephen@nsf.gov.

- Mr. Charles Myers, Head, Interagency Arctic Staff, Arctic Sciences Section, 755 South, telephone: 703-306-1029, e-mail:cmyers@nsf.gov.

For questions related to the use of FastLane, contact, Mrs. Sarita Rich, Fastlane Coordinator, OPP, 755 South, telephone: 703-306-1033, e-mail:srich@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF Guide to Programs is a compilation of funding for research and education in science, mathematics, and engineering. The NSF Guide to Programs is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the GPG. Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the NSF E-Bulletin, which is updated daily on the NSF web site at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's

Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

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The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 306-0090, FIRS at 1-800-877-8339.

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PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January

5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 - 17th Street, N.W. Room 10235, Washington, D.C. 20503.

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